congestion indication and rate control.

REMARKS/ARGUMENTS

In the Office Action, the Examiner cites three US patents: US 9865149 (to Kalman e al),

US 6771671 (to Fields et al.) and US 6466984 (to Naveh et al.), and an article of James Kurose

et al. as jeopardizing non-obviousness of the present patent application (35 USC #103).

The Applicant disagrees with the Examiner's opinion, and the arguments are presented

below.

Rejections Under 35 U.S.C. §103(a)

1.   The Kalman et al. '149 Patent in View of the Fields et al. '671 Patent

The Examiner rejected claims 1-10, 12-20 under 35 U.S.C. 103(a) as being unpatentable

over Kalman (U.S. 6,865,149) and further in view of Fields (U.S. 6,771,671).

Response

Neither of the references alone, nor any of their combinations teaches providing a

service/signaling channel at the Ethernet level, in the form of service packets compatible with

the Ethernet informational packets and serving for carrying indication of signaling functions to

be performed at the level of Ethernet.

Kalman mentions signaling at the level of SONET (SDH) in the optical ring networks

(see the abstract and the background of Kalman), the signaling is utilized for obtaining

information about span cuts and determining a protection route in the ring network in case of a

failure. Kalman does not say anything about signaling channel/ service flow /signaling packet

flow at the Ethernet layer. The only hint on having any Ethernet equipment at all in the network

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can be found in Kalman in col. 12 (lines 5-15). Kalman mentions that a processor having an Ethernet port may modify information in the header of packets not destined for the node. However, even if we assume that the "modification" is performed at the Ethernet layer, no additional (service) packet flow is created; the changes affect the informational packets themselves. The modification, if at all performed at the Ethernet level, relates to a known standard functionality at the Ethernet level, according to which the informational packets are changed depending on the errors in the Ethernet traffic; the function of changing the header (such as "double tagging") also allows forwarding, routing (switching, addressing) the packet to different destinations according to indications in its header. As can be seen in Fig. 7 of Kalman, the packets from the packet processor 48 are forwarded to Switch Fabric 50.

Contrary to that, <u>the present invention proposes forming additional service packets to be transmitted together with the informational packets (in a combined packet flow) at the Ethernet level</u> - and not modifying informational packets. <u>The additional packet flow performs an additional, different functionality,</u> different from the switching /routing function mentioned in the Kalman reference.

To be more specific, this signaling/service functionality can be called "operating and maintenance function " at the level of Ethernet, and it is not related to any routing or switching. Examples of the signaling functions claimed in the independent Claim 1 are presented in the specification and in Claim 11.

It is correct that Fields (US 6771671) describes technique of multiplexing different packet flows, for example Ethernet packet flows.

<u>The Examiner contends that Fields in 1, lines 15-23, 59-62 and col. 2, lines 50-61</u>

discusses reasons based on which the multiplexing technique could be combined with the

technique of the Kalman's reference and would bring the solution claimed in the present

invention. The Applicant strongly disagrees. Fields discusses the need in high bandwidth

communication links, and various possibilities of synchronizing different data flows for

multiplexing and further transmitting via high bandwidth lines.

Neither Fields, nor Kalman describes or suggests anything similar to a signaling/service

packet flow at the Ethernet level. Therefore, a combination of the Kalman and Field references

cannot bring the idea of organizing a service packet flow, it can only teach how different

informational flows can be combined.

Therefore, Claims 2 - 10 and 12 - 20 are novel and non-obvious.

Response

To criticize features of Claim 2, the Examiner uses the same text portions from Kalman

and Fields as were used for criticizing Claim 1. However, nothing is said in Kalman that a kind

of signaling (Kalman in col 3 lines 10-15 mentions broadcasting) is performed at the Ethernet

level. Moreover, there is nothing in common between the Kalman's broadcasting and a packet

signaling flow described in the present application. Claim 2 therefore looks patentable.

The Examiner is at least inaccurate in citing the same Kalman's col. 3, lines 10-16

against Claim 3. No mention of monitoring the informational flow and/or external instructions

could be found in the text portion cited.

Claim 3 therefore is patentable.

Response

Claim 4 is patentable due to the same reasons which Applicant presents in respect of Claim 1.

Response

Claims 5 and 6 should be considered patentable at least due to being dependent from Claim 1. Moreover, Fig. 3 of Kalman's reference shows nothing in common with the additional monitoring points or operating points between (capable of monitoring the Ethernet informational flow and producing/receiving an Ethernet signaling flow) between the basic operating points.

Claims 5 and 6 are patentable.

Response

Claim 7 is objected by the Examiner as being obvious in view of Kalman, Fields and the article of Kurose. Kalman and Fields do not discuss a service packet flow at the level of Ethernet (see above). The cited article comprises the most general information about Ethernet which could be found in the related art, and nothing in the article points out, say, necessity and/or affordability and/or simplicity, etc. of organizing a signaling channel at the level of Ethernet and in the pure Ethernet line.

Claim 7 therefore is asserted to be patentable over the cited references.

Response

Claims 8, 9, 10 and 15 are objected by the Examiner using the same arguments as those used against our Claim 1. Our counter-arguments are the same, too: neither of the cited references mentions a service (signaling) packets flow at the Ethernet level, and thus none of them or their combination can mention combining this flow with any other packet flow.

Claims 8, 9, 10 and 15 are therefore patentable.

Response

Claims 12 and 19 are rejected by the Examiner based on col.3 lines 10-17 ofKalman, as describing a Tandem Connection function (according to the wording in the Office Action). The Applicant cannot find any relation to performance monitoring function including a Tandem Connection function in the cited text portion. The cited text portion describes broadcasting a high priority message, by a node, about a fault in a link, in case such a fault is detected by the node. Again, and as any of the text portion mentioned above, the cited text has no relation to any signaling function on the Ethernet level, and does not describe any additional signaling packet flow which would be combined with the informational flow.

Claims 12 and 19 are therefore patentable.

It should be noted that all the claims above and all the further claims are rejected using the same text portions and the same arguments as above. Therefore, it appears counter-productive to continue referring to each of the remaining rejected claims **13, 14, 16, 18, 20, 17** separately. The counter-argument will be also the same and that neither of the references or their combination describes or suggests creating a service/signaling packet flow at the Ethernet

level, which service/signaling flow can be combined with the informational Ethernet packet

flow.

2.   Claim 11 - The Naveh et al. `984 Patent

The Examiner rejected Claim 11 under 35 U.S.C. 103(a) as being unpatenable over

Kalman and Fields as applied to claim 1, and further in view of Naveh.

Response

Only Claim 11 is rejected by the Examiner using an additional reference to Naveh (US

6466984). The Examiner contends that Naveh teaches about a particular signaling function in

the packet header and providing data on said function in the data field. It should be pointed out,

that

a)   Naveh describes the function for IP protocol;

b)   Naveh uses the informational IP packet for indicating therein (in the field TOS)

the type of Quality of Service (QOS) which should be applied to the packet flow to which the

packet belongs. Note, that Naveh does not create an additional signaling packet flow; The

Examiner considers that the motivation given in Naveh (col 4, lines 20-25), i.e. invoking QOS

functions, automatically leads to the idea to create a signaling packet flow at the Ethernet layer.

The Applicant disagrees, since QOS functions are not the signaling functions, QOS is not the

purpose of the present invention, IP protocol is a protocol different from the Ethernet protocol,

packets forming an information flow, the method comprises utilizing a combined flow composed from said information flow and one or more service flows formed from service packets being compatible with said information packets, wherein said one or more service flows form the signaling channel at the level of Ethernet, the service packets belonging to a particular service flow carry indication of a corresponding one of said signaling functions to be performed, and wherein said one or more of the signaling functions enable achieving at least one of the following objectives:

performance monitoring;

far end status indication, including remote failure indication;

remote loopback, including one way and round trip delay measurement;

link monitoring, including connection integrity check;

buffer fill check,

congestion indication and rate control.

The new claim 21 is fully supported by the description on pages 16 -18.

CONCLUSION

In light of the foregoing, Applicant submits that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicant petitions for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,
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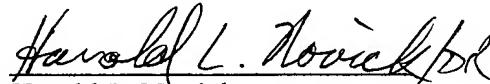
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